Course Material
Node-RED

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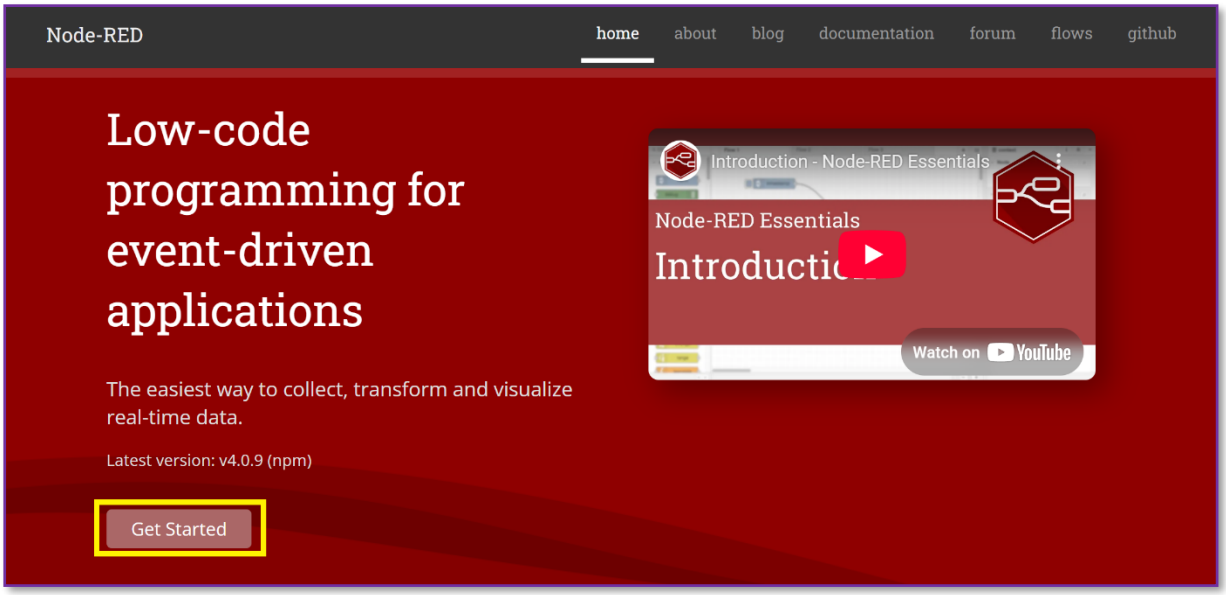
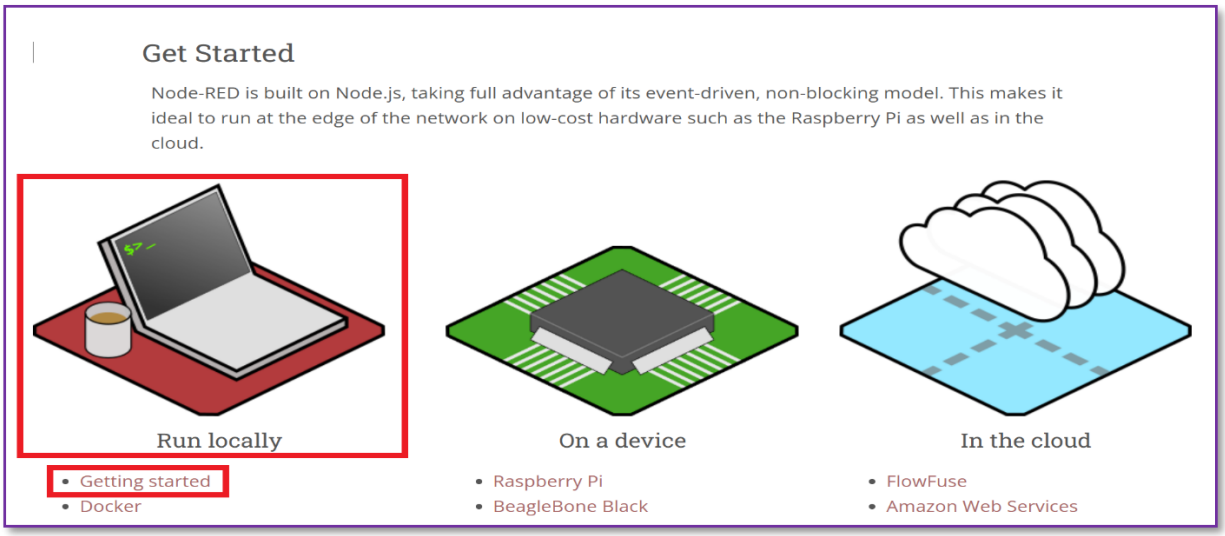
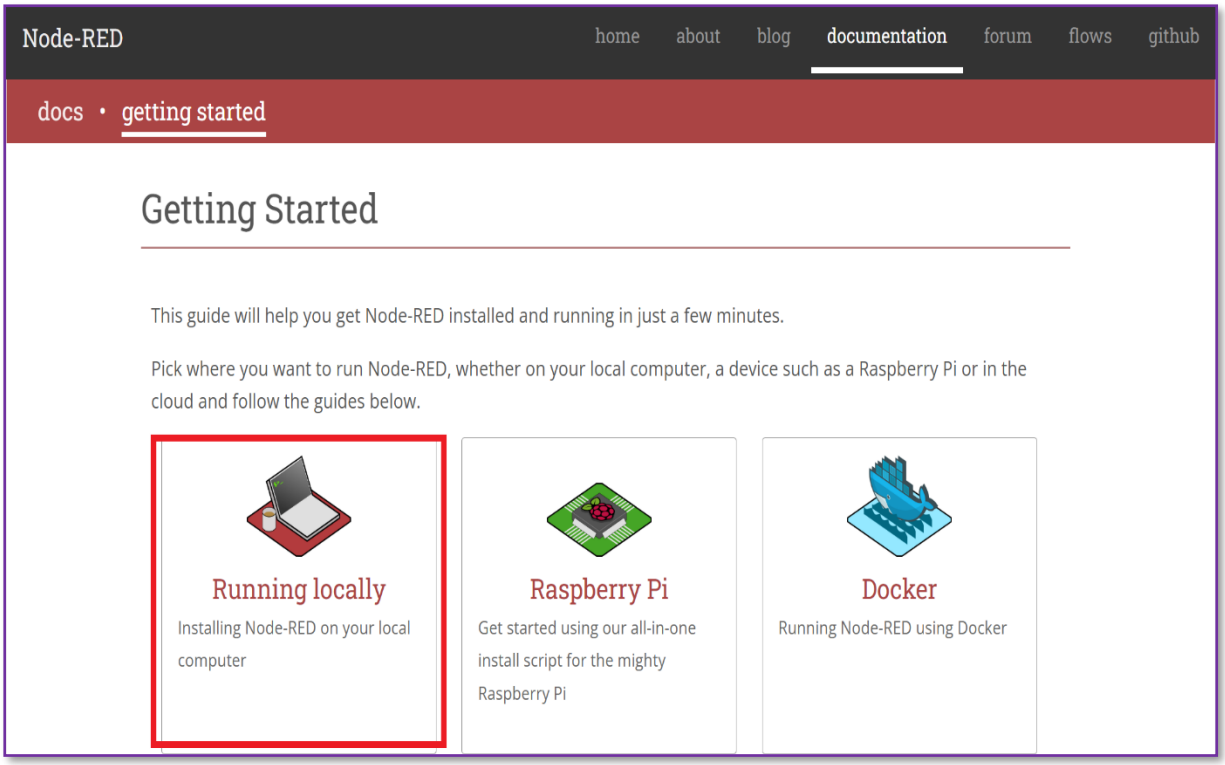
Installation

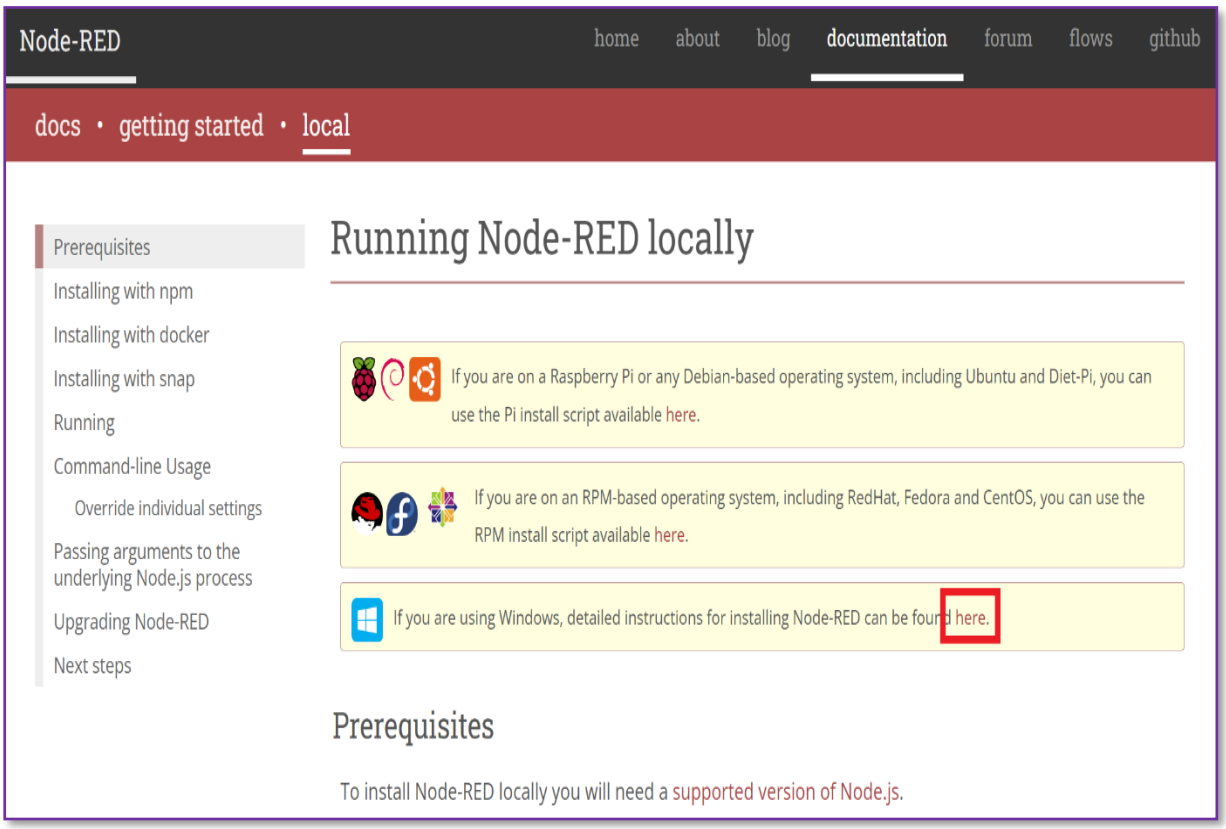
1. Go to https://nodered.org/
2. Click on **"Get Started → Run locally → Getting started → Running locally".**

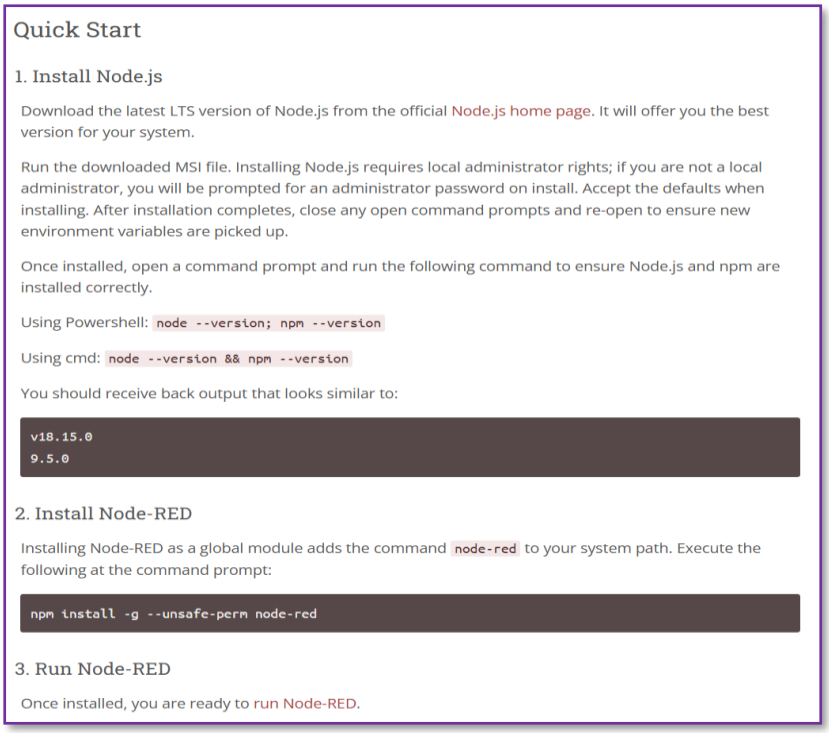






3. For Windows installation, click on the highlighted link and follow the steps to install Node.js.
   https://nodered.org/docs/getting-started/windows





Quick Start

1. Install Node.js

Download the latest LTS version of Node.js from the official Node.js home page. It will offer you the best version for your system.

Run the downloaded MSI file. Installing Node.js requires local administrator rights; if you are not a local administrator, you will be prompted for an administrator password on install. Accept the defaults when installing. After installation completes, close any open command prompts and re-open to ensure new environment variables are picked up.

Once installed, open a command prompt and run the following command to ensure Node.js and npm are installed correctly.

Using Powershell: `node --version; npm --version`

Using cmd: `node --version && npm --version`

You should receive back output that looks similar to:

```
v18.15.0
9.5.0
```

2. Install Node-RED

Installing Node-RED as a global module adds the command `node-red` to your system path. Execute the following at the command prompt:

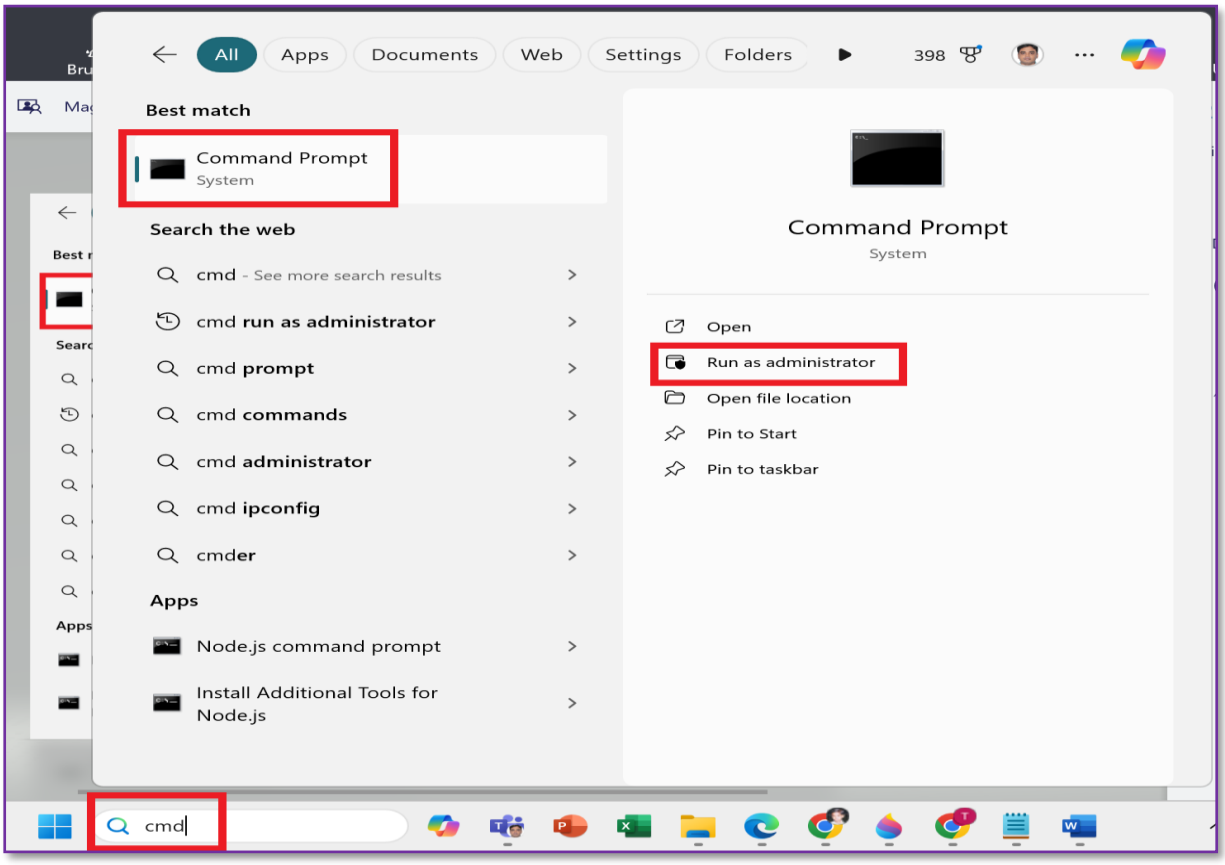
```
npm install -g --unsafe-perm node-red
```

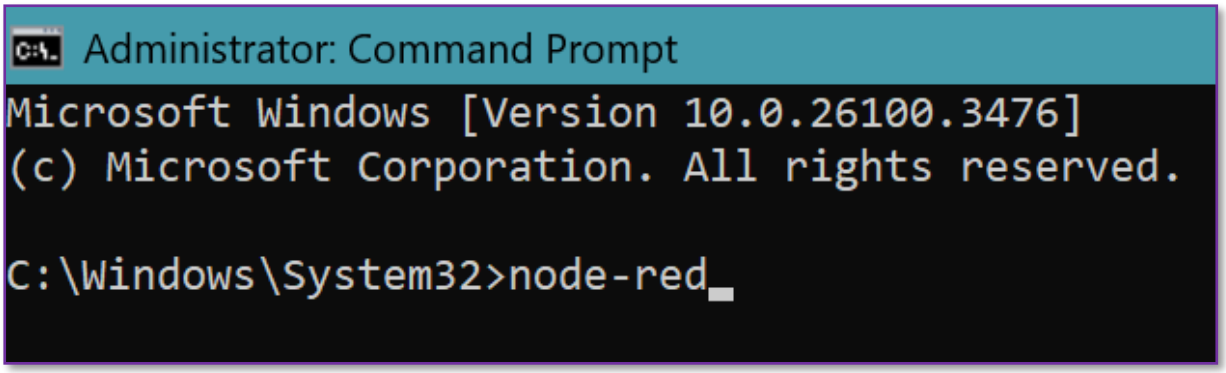
3. Run Node-RED

Once installed, you are ready to run Node-RED.

Node-RED – User Guide

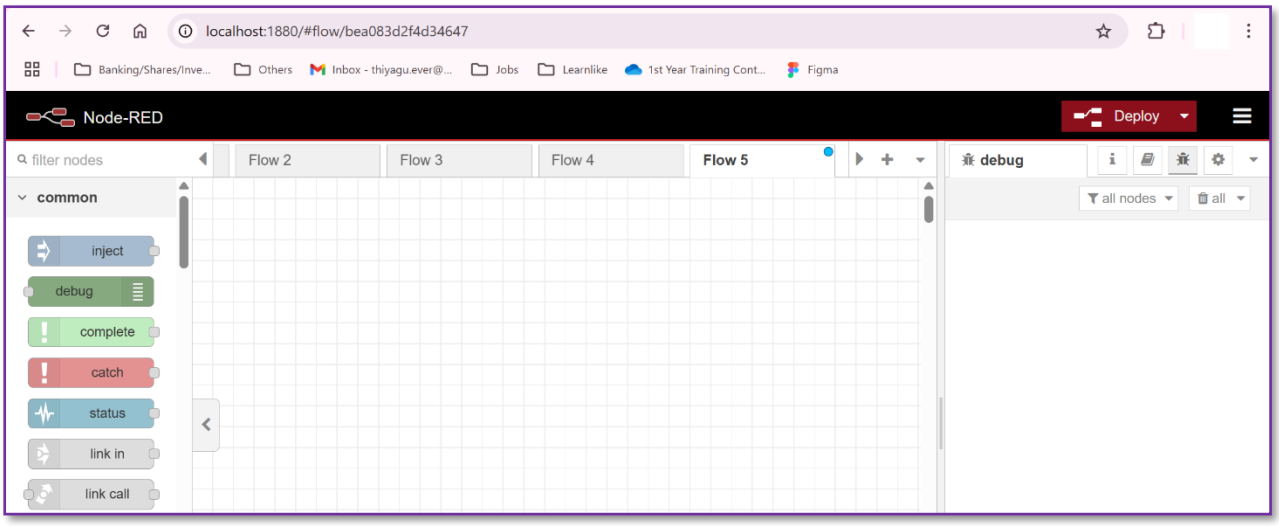
1. Open the Command Prompt on your PC by typing "**cmd**" in the search bar and selecting "**Run as administrator**". Inside the Command Prompt, type "**node-red**" and press **Enter** to run Node.js.






```
node-red
Microsoft Windows [Version 10.0.26100.3476]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>node-red
19 Mar 12:12:07 - [info]

Welcome to Node-RED
===================

19 Mar 12:12:07 - [info] Node-RED version: v4.0.9
19 Mar 12:12:07 - [info] Node.js  version: v22.14.0
19 Mar 12:12:07 - [info] Windows_NT 10.0.26100 x64 LE
19 Mar 12:12:19 - [info] Loading palette nodes
19 Mar 12:12:31 - [info] Dashboard version 3.6.5 started at /ui
(node:17712) [DEP0044] DeprecationWarning: The `util.isArray` API is deprecated. Please use `Array.isArray()` instead.
(Use `node --trace-deprecation ...` to show where the warning was created)
Unhandled rejection Error: ENOENT: no such file or directory, open 'C:\02.png'

19 Mar 12:12:35 - [info] Settings file  : C:\Users\Thiyagarajan\.node-red\settings.js
19 Mar 12:12:35 - [info] Context store  : 'default' [module=memory]
19 Mar 12:12:35 - [info] User directory : \Users\Thiyagarajan\.node-red
19 Mar 12:12:35 - [warn] Projects disabled : editorTheme.projects.enabled=false
19 Mar 12:12:35 - [info] Flows file     : \Users\Thiyagarajan\.node-red\flows.json
19 Mar 12:12:35 - [warn]

---------------------------------------------------------------------
Your flow credentials file is encrypted using a system-generated key.

If the system-generated key is lost for any reason, your credentials
file will not be recoverable, you will have to delete it and re-enter
your credentials.

You should set your own key using the 'credentialSecret' option in
your settings file. Node-RED will then re-encrypt your credentials
file using your chosen key the next time you deploy a change.
---------------------------------------------------------------------

19 Mar 12:12:35 - [info] Server now running at http://127.0.0.1:1880/
19 Mar 12:12:35 - [info] Starting flows
19 Mar 12:12:35 - [info] Started flows
```

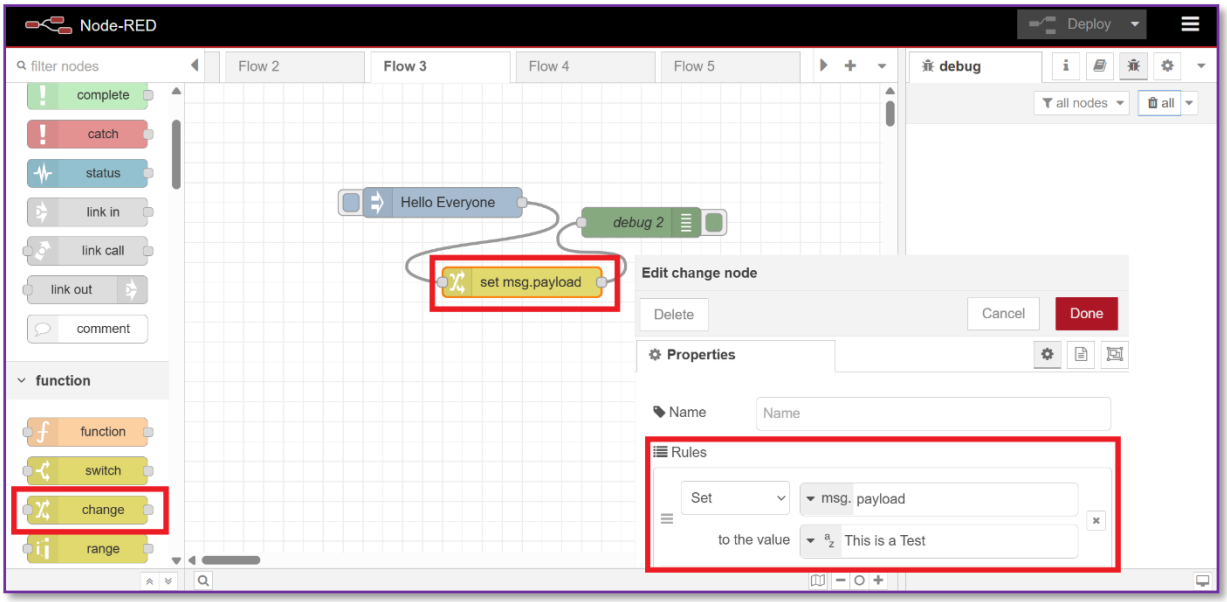
2. After initializing Node-RED, open any browser and enter http://localhost:1880 in the address bar to launch Node-RED in the browser.



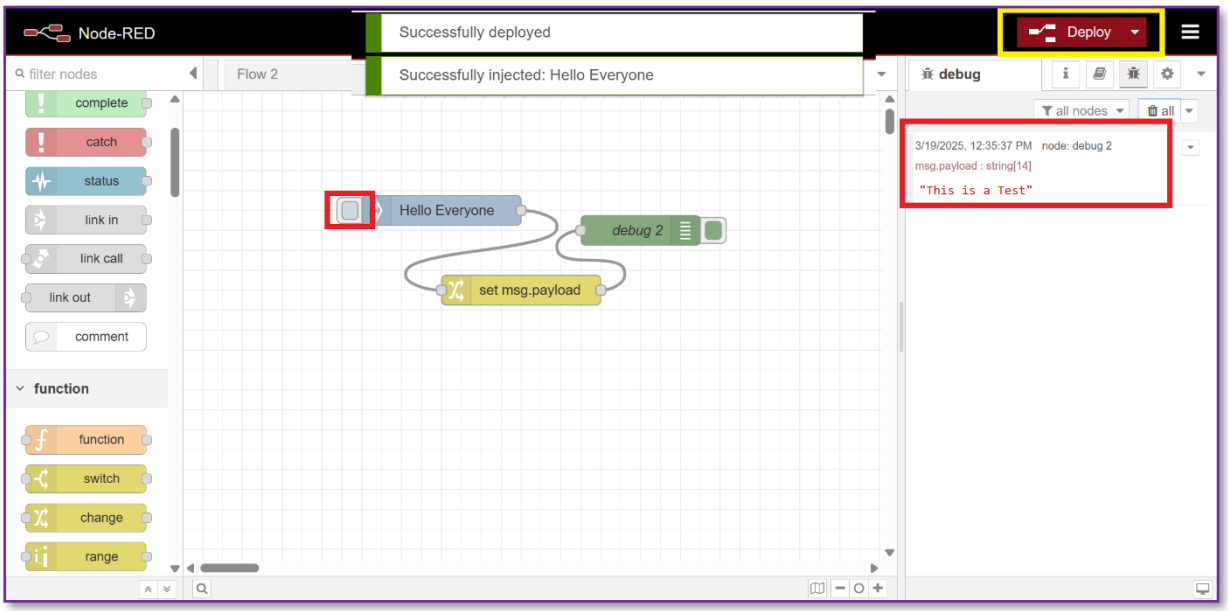
3. Follow this Node-RED YouTube tutorial to create your first flow and understand its functionality.

Note: ***Always keep the command prompt open to run Node.js. If closed Node-RED will stop working.***

4. Scroll down and add the "**change**" function to modify the **msg.payload** input to a new value.

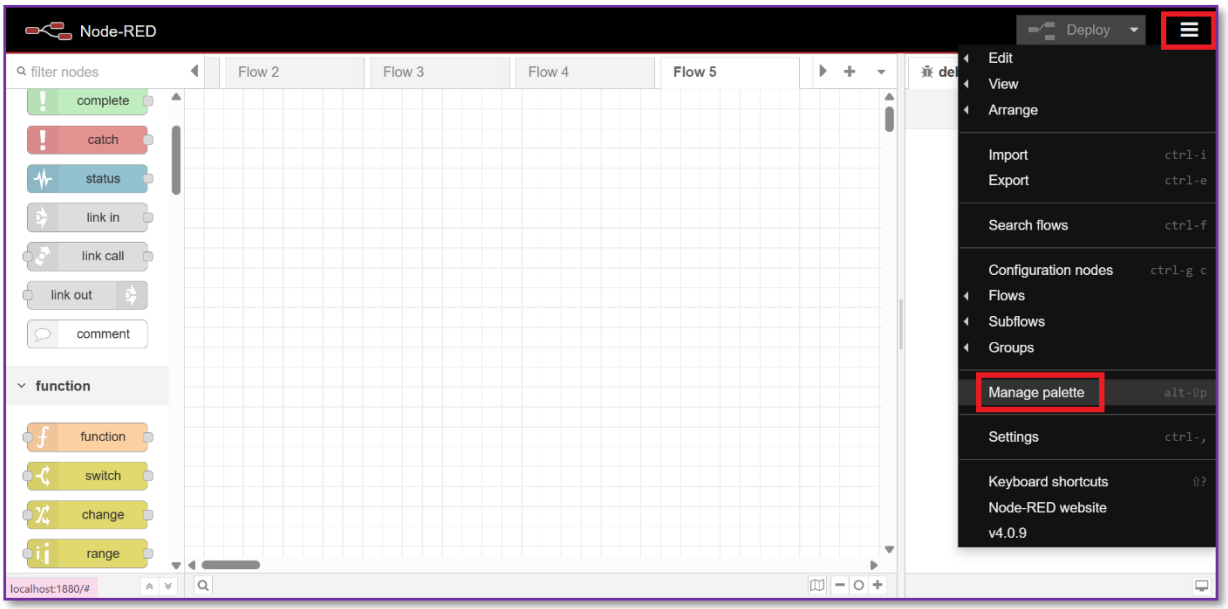


5. Click on “**Deploy**”, then click on “**Inject**” to see the changes in action.

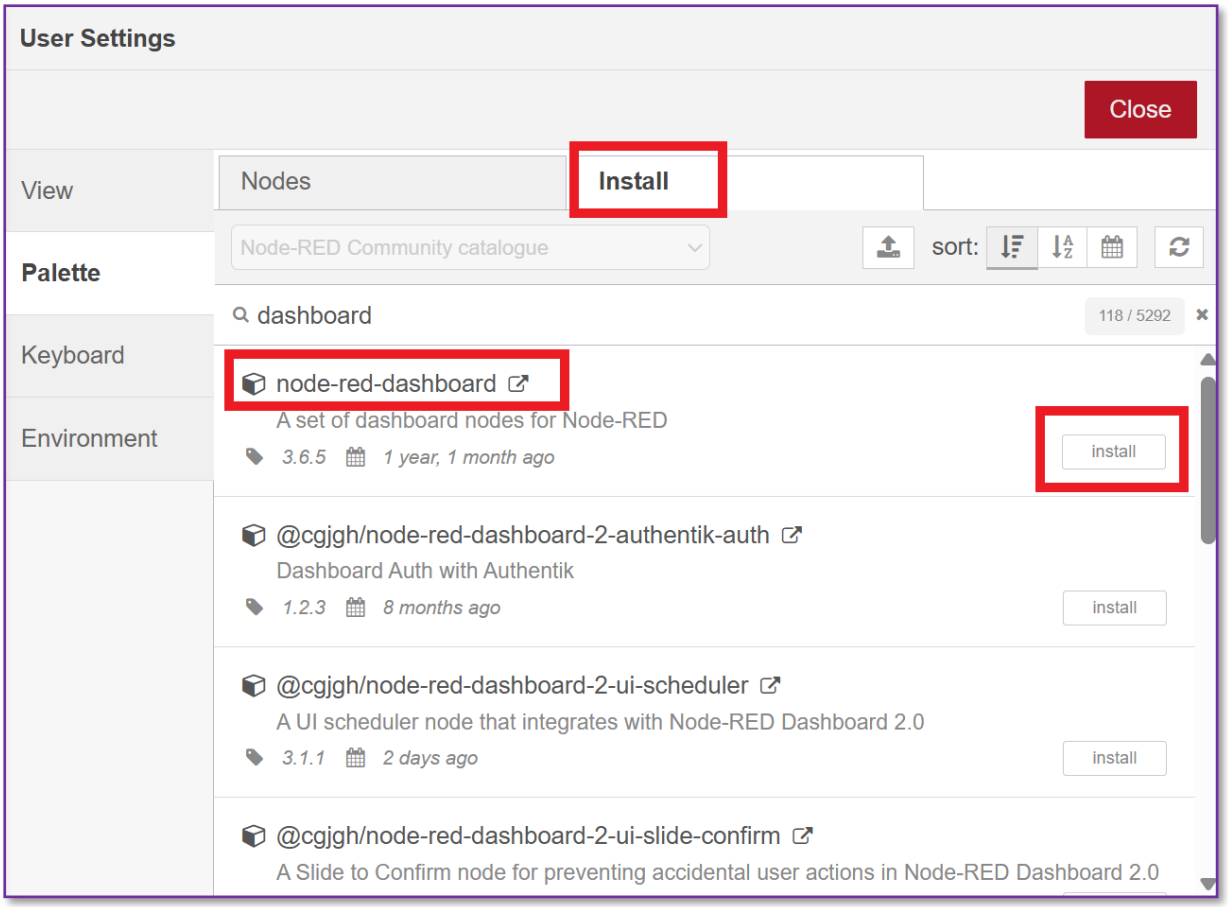


Node-RED – Dashboard

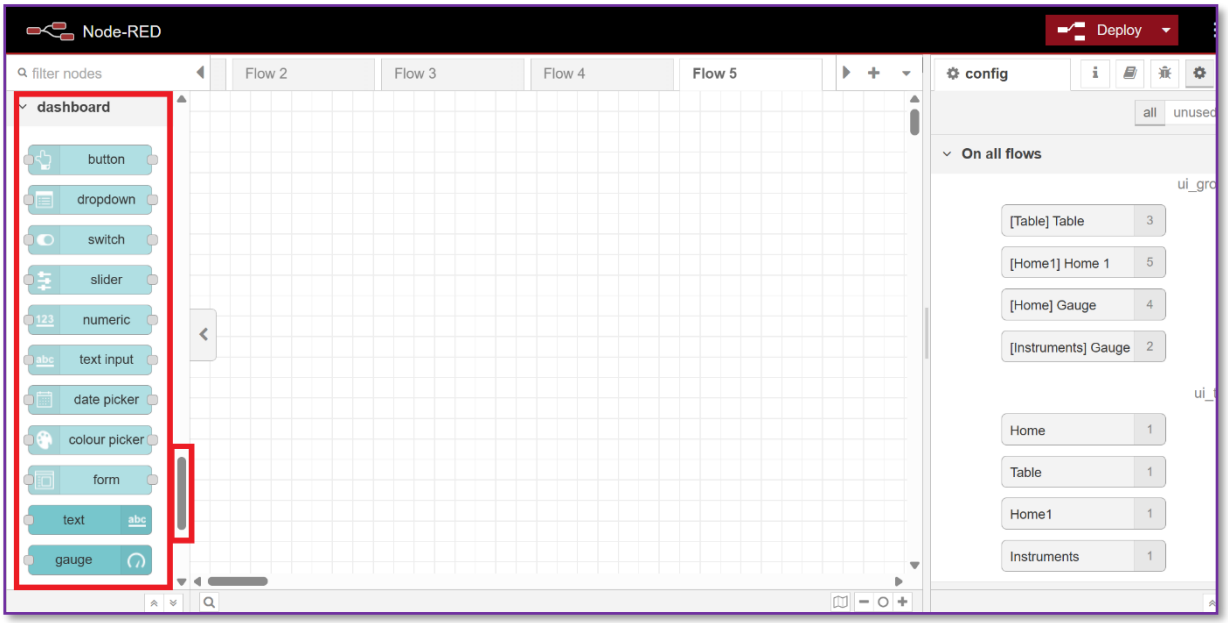
1. Click on the **Hamburger menu** (☰) in the top right corner and select **Manage palette**.



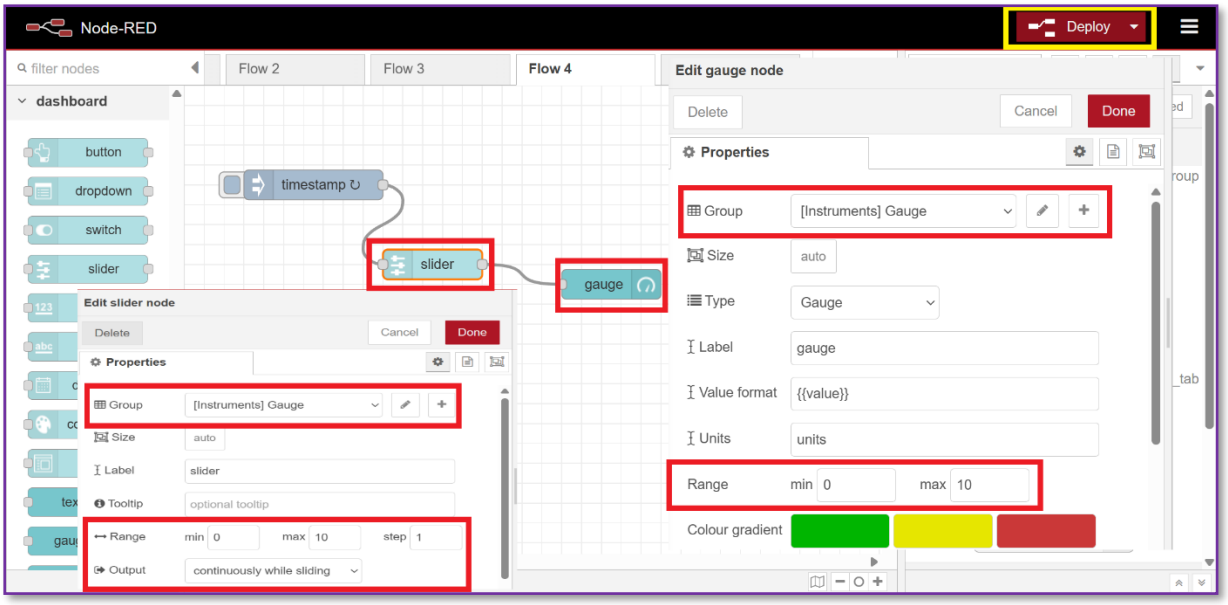
2. Go to the “**Install**” tab, search for **dashboard**, select “**node-red-dashboard**”, and click “**Install**” to add the node.

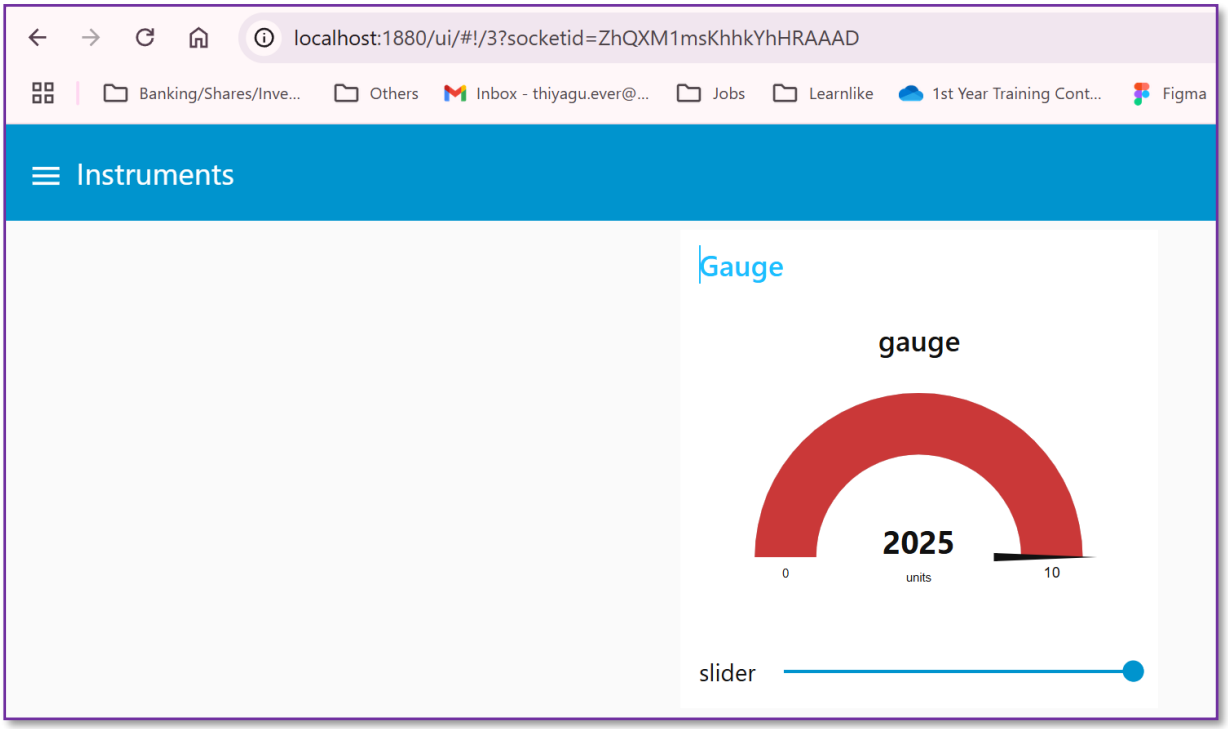


3. Scroll down the left navigation menu to view the dashboard nodes that have been added to your Node-RED workspace, allowing you to create UI components for your flows.



4. Follow this simple dashboard setup to connect a slider with a gauge. To access the UI in your browser, type http://localhost:1880/ui.





5. Visit the **Node-RED Tutorials** YouTube channel page for step-by-step guides. https://www.youtube.com/playlist?list=PLyNBB9VCLmo1hyO-4fIZ08gqFcXBkHy-6

6. You can access the **Node-RED User Guide** at the official website: Node-RED User Guide
   This guide covers installation, flow creation, nodes, dashboards, and advanced features.